

Heat Illness Prevention: What you need to know



CALIFORNIA DEPARTMENT OF INDUSTRIAL RELATIONS DIVISION OF OCCUPATION SAFETY & HEALTH CAL/OSHA JUNE 2008

SAVE LIVES: Follow California's Heat Illness Prevention Standard

by Len Welsh, Chief, Cal/OSHA



As temperatures rise, so does the risk of heat illness, a medical condition that results from the body's inability to cope with heat and cool itself. We cannot emphasize

strongly enough to all employers that heat illness can be deadly. This risk is generally the highest for people who work outdoors, and that is why California's Heat Illness Prevention Standard was developed.

Cal OSHA findings from 2006 showed that 84 percent of all heat illnesses occurred during the July heat wave that year. This further illustrates the need for employers to implement additional preventive measures during a heat wave.

The best defense against heat-related illnesses and fatalities is prevention. The Heat Illness Prevention Standard, Title 8, California Code of Regulations, Section 3395, adopted June 15, 2005, requires all employers with outdoor worksites to take steps to prevent heat illness.

The four basic steps are shown at right. Inside this newsletter you'll read what is required and also some best practices you can follow to go above and beyond the standard to create a healthy and safe workplace for your employees.

Your compliance and cooperation are essential to help us keep California's workers on the job and contributing to the well-being of their families and our growing economy.

Sincerely,

Len Welsh
Chief, Cal/OSHA

Take these four steps to prevent heat illness



1. Training

Train all employees and supervisors about heat illness prevention.

2. Water

Provide enough fresh water so that each employee can drink at least 1 quart per hour, *and encourage them to do so.*

3. Shade

Provide access to shade for at least 5 minutes of rest when an employee believes he or she needs a preventative recovery period. *They should not wait until they feel sick to do so.*

4. Planning

Develop and implement written procedures for complying with the heat illness prevention standard.

Heat illness types and symptoms

Heat stroke, the most serious health problem for workers in hot environments, is caused by the failure of the body's internal mechanism to regulate its core temperature. Sweating stops and the body can no longer rid itself of excess heat. Victims of heat stroke will die unless treated promptly.

Signs include:

- Mental confusion, delirium, loss of consciousness, convulsions or coma;
- A body temperature of 106 degrees Fahrenheit or higher; and
- Hot, dry skin which may be red, mottled, or bluish.

Heat exhaustion results from loss of fluid through sweating when a worker has failed to drink enough fluids or take in enough salt, or both. The worker with heat exhaustion still sweats, but experiences extreme weakness or fatigue, giddiness, nausea, or headache. The skin is clammy and moist, the complexion pale or flushed, and the body temperature normal or slightly higher.

Heat cramps, painful spasms of the muscles, are caused when workers drink large quantities of water but fail to replace their bodies' salt loss. Tired muscles used for performing the work are usually the ones most susceptible to cramps.

Fainting (*heat syncope*) may be a problem when a worker who is not acclimated to a hot environment simply stands still in the heat.

Heat rash, also known as *prickly heat*, may occur in hot, humid environments where sweat is not easily removed from the surface of the skin by evaporation. Heat rash that is extensive or infected can be so uncomfortable that it inhibits sleep and impedes a worker's performance, or even results in temporary or permanent disability.



Best practices: Go beyond the basics

The Heat Illness Prevention Standard provides a solid foundation for employers to follow in protecting outdoor workers from heat-related illnesses and fatalities. But with the record temperatures expected for the months ahead, Cal/OSHA encourages employers to go beyond the basics in worker safety and take the initiative to provide a healthier work environment.

In addition to regulatory requirements, implement the following best practices for a safer workplace.

Check the Weather

Develop a habit of checking the heat index; by anticipating heat waves you can be prepared.
www.nws.noaa.gov/om/heat/index.shtml



Tailgate Trainings

Consider conducting weekly or daily tailgate trainings on heat illness throughout the summer.

Illness & Injury Prevention Programs

Employers are strongly encouraged to integrate heat illness prevention procedures into your Injury and Illness Prevention Programs.



Cal/OSHA's Heat Illness Standard: What it requires

Training

Before employees can work outdoors, employers are required to provide them with heat illness prevention training. This mandatory training for supervisors and employees under the standard includes the following information:



- Environmental and personal risk factors
- Employer's heat illness prevention plan and procedures
- The need to drink water frequently throughout the day
- Importance of acclimatization—allowing the body to adjust gradually to work in high heat
- Types of heat illness and the signs and symptoms
- Necessity of immediately reporting to an employer any signs or symptoms
- Employer's procedures for responding to symptoms
- Employer's procedures for contacting emergency medical services, including alternative modes of transportation
- Employer's procedures for emergency communications, including emergency response procedures such as location, local medical services, and communication alternatives

Adjusting to the heat

One of the training components mentioned above is the importance of acclimatization, or adjusting to physical activity in hot weather. The body needs time to adapt to increased heat and humidity, especially when one is engaged in heavy physical exertion. Typically, people need four to fourteen days to adjust fully to significant increases in heat. *Cal/OSHA data reveals that most workplace deaths related to heat illness that occurred last year involved new employees who were on the job only one to four days and were unaccustomed to working in hot or humid weather.*

While employers are required to train employees on the importance of acclimatization, it is up to employers to determine what acclimatization procedures they will use. The best strategy is to allow employees, and especially new ones, to adjust to hot weather by gradually increasing to a full work shift and pace. On very hot days, other good strategies include timing the shift so that more work can be done during the cooler parts of the day, increasing the number of water and rest breaks, and using a "buddy system" so that workers and supervisors can monitor each other. Also, employees should be reminded of the cooling benefits of wearing loose fitting, light-colored clothing and a wide-brimmed hat, when it's feasible.

Shade

2005 safety and health data shows that all the surviving victims of heat illness had access to some shade during work periods, lunch, or at breaks. Under Cal/OSHA's standard, an employee working outdoors who wants to cool off must be provided with shade for at least five minutes at a time. Shade for heat illness recovery periods must be accessible to employees at all times. In industries other than agriculture, employers may utilize measures other than shade to provide cooling if they can demonstrate that these alternative measures are at least as effective as shade.



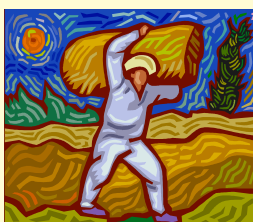
More best practices

Water

It is essential to keep water nearby for employees instead of drinks with caffeine and sugar, as these can dehydrate a person even more. Add ice to the water and increase the number of water breaks.

Shade

Provide your workers with shade whenever possible. Consider easy-to-assemble portable shades, such as umbrellas, canopies, or other temporary structures. *Remember, the investment you're making is in your employees' lives.*



Clothing

Encourage workers to employ the cooling benefits of loose fitting, light-colored clothing and wide-brimmed hats when and if work allows.

Rest Breaks

Provide rest breaks in a shady, comfortable, safe place.



Buddy System

Utilize a "buddy system" so workers and supervisors can monitor each other when out in the field.

Shift Change

When temperatures are excessive, time your shifts to accomplish heavy work during the cooler parts of the day, and consider starting and/or ending your shifts early. Also, alternate tasks when possible.

Shade, continued

According to the standard, shade means blockage of direct sunlight. Shade is sufficient when objects do not cast a shadow in the shaded area and there is sufficient space for the employee to be comfortable. Shade is not adequate when the temperature in the shaded area prevents cooling. You must avoid sources of shade such as metal sheds or parked cars that are hot from sitting in the sun. Also, tractors and other machinery do not qualify as sources of shade and have the potential to create an even greater hazard.



If you have employees who work outdoors, consider some easy-to-assemble portable sources of shade, such as umbrellas, canopies, or other temporary structures. Buildings, canopies, and trees all can qualify for shade as long as they block the sunlight and are either ventilated or open to air movement.

Water

The third component of the standard requires an employer to provide employees working outdoors one quart of potable, fresh and cool water per person, per hour. In case studies, Cal/OSHA data revealed that, even though drinking water was present at most worksites, 96 percent of those who succumbed to the heat suffered from dehydration. Therefore, it is critical to keep drinking water accessible and remind your workers to drink it frequently.

In addition to encouraging employees to drink water frequently, employers need to be on the lookout for work situations that interfere with access to water—especially during a heat wave. *Water is a key preventative measure against heat illness.*



Written Procedures

The standard requires an employer's heat illness prevention procedures to be in writing and made available to employees and to representatives of Cal/OSHA upon request. These written procedures must include:

- How an employer will comply with the Heat Illness Prevention Standard requirements
- How to respond to symptoms of possible heat illness, including how emergency medical services will be provided
- How to contact emergency medical services, and if necessary, how employees will be transported to a point where they can be reached by an emergency medical service provider
- How they will ensure that, in the event of an emergency, clear and precise directions to the work site can and will be provided as needed to emergency responders

Employers are encouraged to integrate their heat illness prevention procedures into their Injury and Illness Prevention Programs (IIPPs).

Create a safe, healthy & productive workplace

All the elements of the Heat Illness Prevention Standard must be implemented to prevent serious illness to your workers. By protecting your employees from heat illness, you promote a healthier and more productive workplace.

To learn more about the Heat Illness Prevention Standard, visit www.dir.ca.gov.



Cal/OSHA District Offices

Concord..... (925) 602-6517
 Foster City..... (650) 573-3812
 Fremont..... (510) 794-2521
 Fresno (559) 445-5302
 Los Angeles (213) 576-7451
 Modesto..... (209) 576-6260
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 Santa Rosa (707) 576-2388
 Torrance..... (310) 516-3734
 Van Nuys..... (818) 901-5403
 Ventura (805) 654-4581
 West Covina..... (626) 472-0046

Department of Industrial Relations

Division of Occupational Safety & Health—Cal/OSHA

1515 Clay Street, Suite 1901
 Oakland, CA 94612

www.dir.ca.gov

June 2008

Cal/OSHA Consultation Services Offers Heat Illness Trainings

Heat illness prevention training seminars are being offered across California along with other educational services. Cal/OSHA Consultation Services helps employers reduce workplace injuries and illness through on-site visits, telephone consultation, publications and educational outreach. In addition, employers may receive recognition for their achievements and inspection exemptions through Cal/OSHA partnership programs. All consultations from Cal/OSHA Consultation are confidential and free of charge. Please call 1-800-963-9424 or check the Web site www.dir.ca.gov for information on these services.

Free Information on Heat Illness Prevention from Cal/OSHA Consultation Service



Heat Illness Prevention etool

Learn about risk factors and the basics on preventing and responding to heat illness, and how to develop a written heat illness prevention program. This etool contains warnings to alert you to high risk situations and conditions. It also has detailed information on effective best practices to prevent, recognize and respond to heat illness. Included are smart tips with practical suggestions to help you put into place an effective program.

Visit www.dir.ca.gov/dosh/etools/08-006/index.htm for the latest heat illness information.

Protect Yourself from Heat Illness

This handy pocket guide suggests practical steps employees can take to prevent heat illness. (Available in English and Spanish)

Download Publications

More than 100 free workplace health and safety publications on various topics and in various languages, including Spanish, are available on the Cal/OSHA Web site. You can download copies from the Internet at www.dir.ca.gov/dosh/puborder.asp.

